

AMENDMENTS

Please amend the claims as follows:

1-13. (cancelled)

14. (currently amended) A backing block for z-axis electrical connection, the block comprising:

_____ a plurality of flexible circuit material layers each having a plurality of electrical traces; and

_____ a plurality of separate pieces of acoustic attenuating material alternating with the flexible circuit material layers, the electrical traces exposed on a first surface from between the pieces of acoustic attenuating material and the flexible circuit material layers extending from the acoustic attenuating material on a side opposite the first surface

~~The backing block of Claim 13~~ wherein the electrical traces on the first surface have a first pitch along at least a first dimension and the flexible ~~circuits~~ circuit material layers have a second pitch greater than the first pitch along the first dimension on the side opposite the first surface.

15. (original) A transducer stack for electrical connection, the stack comprising:

a transducer array of elements; and

a backing block comprising alternating layers of acoustic attenuating material and electrical trace supporting material, each layer of acoustic attenuating material being a separate block of acoustic attenuating material, the backing block adjacent to the elements and the electrical trace supporting material extending substantially along a z-axis from the elements and diverging from the z-axis within the backing block.

16. (original) The transducer stack of Claim 15 wherein the electrical trace supporting material comprises a flexible circuit.

17. (original) The transducer stack of Claim 15 wherein the transducer array comprises a multidimensional array of elements and wherein a pitch of the alternating layers at the elements is substantially the pitch between the elements along at least one dimension.

18. (original) The transducer stack of Claim 15 wherein the transducer array comprises a multidimensional array of MxN elements and wherein a first number layers of electrical trace supporting material is about M and a second number of electrical traces on each layer of the electrical trace supporting material is about N.

19. (original) The transducer stack of Claim 18 wherein about M+1 layers of the acoustic attenuating material alternate with the about M layers of electrical trace supporting material.

20. (original) The transducer stack of Claim 15 further comprising a plurality of electrical traces supported by the layers of electrical trace supporting material, the plurality of electrical traces extending substantially orthogonal to a bottom surface of transducer array, the elements spaced along the bottom surface.

21. (original) The transducer stack of Claim 15 further comprising:
an electrode on the bottom surface for each of the elements;
wherein each of the electrical traces is plated at a portion adjacent to a respective electrode.

22. (original) The transducer stack of Claim 15 wherein the alternating layers are bonded together.

23. (original) The transducer stack of Claim 15 wherein the layers of acoustic attenuating material comprise plates of material and the layers of electrical trace supporting material comprise sheets of material with traces, each of the layers of electrical trace supporting material at least partially sandwiched by two different layers of the acoustic attenuating material.

24. (original) The transducer stack of Claim 15 wherein at least two layers of electrical trace supporting material diverge by different amounts from orthogonal to the elements.

25. (currently amended) A transducer stack for electrical connection, the stack comprising:

a transducer array of elements; and
a backing block comprising layers of acoustic attenuating material, each layer of acoustic attenuating material being a separate block of acoustic attenuating material, the backing block adjacent to the elements, each layer of acoustic attenuating material comprising electrical trace supporting material extending substantially along a z-axis from the elements and diverging from the z-axis within the backing block;

~~The transducer stack of Claim 15 wherein the electrical trace supporting material comprises the layers of acoustic attenuating material,~~ at least one of the layers of acoustic attenuating material having a plurality of grooves with electrical traces within the grooves.

26. (original) The transducer stack of Claim 15 wherein the electrical trace supporting material terminates at a surface of the backing block.